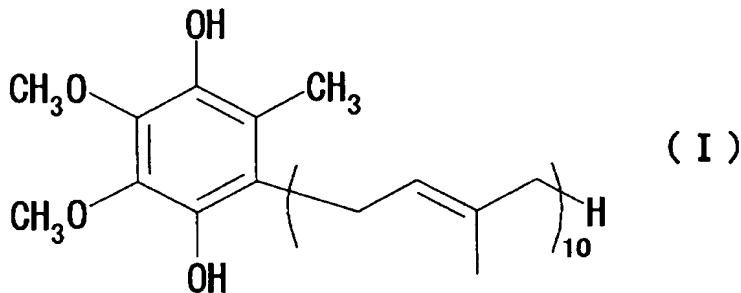


Amendments to the Claims

A complete listing of the claims are listed below with proper claim identifiers.

1. (Original) A process for producing the reduced coenzyme Q₁₀ represented by the following formula (I):



which comprises culturing reduced coenzyme Q₁₀-producing microorganisms in a culture medium containing a carbon source, a nitrogen source, a phosphorus source and a micronutrient to obtain microbial cells containing reduced coenzyme Q₁₀ at a ratio of not less than 70 mole % among the entire coenzymes Q₁₀,
optionally disrupting the microbial cells and
extracting thus-produced reduced coenzyme Q₁₀ by an organic solvent.

2. (Original) The process according to Claim 1,
wherein the reduced coenzyme Q₁₀ is contained at a ratio of not less than 70 mole % among the entire coenzymes Q₁₀.

3. (Canceled)

4. (Currently Amended) The process according to ~~any one of Claims 1 to 3~~ Claim 1,
wherein the culture is carried out at 15 to 45°C and at a pH of 4 to 9.

5. (Currently Amended) The process according to ~~any one of Claims 1 to 4~~ Claim 1,

wherein the concentration of the carbon source in the culture is controlled to a concentration that no adverse effects are substantially caused on the productivity of reduced coenzyme Q₁₀.

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Currently Amended) The process according to ~~any one of Claims 1 to 14~~ Claim 1,

wherein the extraction of reduced coenzymes Q₁₀ is carried out from wet cells or dry cells of the microbial cells or disrupted product thereof by using a hydrophilic organic solvent.

17. (Canceled)

18. (Currently Amended) The process according to ~~any one of Claims 1 to 15~~Claim 1,

wherein the extraction of the reduced coenzymes Q₁₀ is carried out from an aqueous suspension of the microbial cells or disrupted product thereof by using a hydrophobic organic solvent.

19. (Original) The process according to Claim 18, wherein the hydrophobic organic solvent is a hydrocarbon, a fatty acid ester or an ether.

20. (Currently Amended) The process according to ~~Claim 18 or 19~~Claim 18,

wherein the hydrophilic organic solvent is used as an auxiliary solvent in combination with the hydrophobic organic solvent.

21. (Original) The process according to Claim 20, wherein the hydrophobic organic solvent is a hydrocarbon, and the hydrophilic organic solvent is an alcohol.

22. (Canceled)

23. (Canceled)

24. (Currently Amended) The process according to ~~any one of Claims 20 to 23~~Claim 20 to 23,

wherein the extraction is carried out under the condition that the hydrophobic organic solvent is contained in 25 to 65% by volume and the hydrophilic organic solvent is contained in 5 to 50% by volume.

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Currently Amended) The process according to ~~any one of Claims 1 to 28~~ Claim 1,

wherein the reduced coenzyme Q₁₀ is contained at a ratio of not less than 70 mole % among the entire coenzymes Q₁₀

in the case that the reduced coenzyme Q₁₀-producing microorganisms are cultured with shaking (amplitude: 2 cm, 310 reciprocation/min) at 25°C for 72 hours in 10 mL of a culture medium [(glucose: 20 g, peptone: 5 g, yeast extract: 3g, malt extract: 3 g)/L, pH: 6.0] using a test tube (inner diameter: 21 mm, entire length: 200 mm),

the obtained broth is optionally concentrated,

the obtained solution is vigorously shaken for 3 minutes using 10 parts by volume of glass beads (425 to 600 µm) to disrupt the microorganisms under a nitrogen atmosphere in the concomitant presence of 3 parts by volume of isopropanol and 18.5 parts by volume of n-hexane relative to 10 parts by volume of the broth, and

the prepared hydrophobic organic solvent phase (n-hexane phase) is analyzed by HPLC.

30. (Original) The process according to Claim 29,

wherein the reduced coenzyme Q₁₀-producing microorganisms have not less than 1 µg/mL of a productivity of reduced coenzyme Q₁₀ per unit culture medium when measured by HPLC under the condition according to Claim 29.

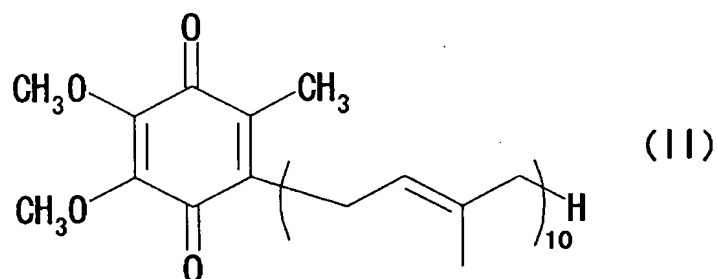
31. (Currently Amended) The process according to ~~any one of Claims 1 to 30~~ Claim 30,

wherein the microorganisms are microorganisms of the genus Agrobacterium, the genus Aspergillus, the genus Acetobacter, the genus Aminobacter, the genus Agromonas, the genus Acidiphilium, the genus Bulleromyces, the genus Bullera, the genus Brevundimonas, the genus Cryptococcus, the genus Chionosphaera, the genus Candida, the genus Cerinosterus, the genus Exisophiala, the genus Exobasidium, the genus Fellomyces,

the genus Filobasidiella, the genus Filobasidium, the genus Geotrichum, the genus Graphiola, the genus Gluconobacter, the genus Kockovaella, the genus Kurtzmanomyces, the genus Lalaria, the genus Leucosporidium, the genus Legionella, the genus Methylobacterium, the genus Mycoplana, the genus Oosporidium, the genus Pseudomonas, the genus Pseudozyma, the genus Paracoccus, the genus ~~Petromyepetromyces~~, the genus Rhodotorula, the genus Rhodospiridium, the genus Rhizomonas, the genus Rhodobium, the genus Rhodoplanes, the genus Rhodopseudomonas, the genus Rhodobacter, the genus Sporobolomyces, the genus Sporidiobolus, the genus Saitoella, the genus Schizosaccharomyces, the genus Sphingomonas, the genus Sporotrichum, the genus Sympodiomyces, the genus Sterigmatosporidium, the genus Tapharina, the genus Tremella, the genus Trichosporon, the genus Tilletiaria, the genus Tilletia, the genus Tolyposporium, the genus Tilletiopsis, the genus Ustilago, the genus ~~Udeniomyce~~Udeniomyces, the genus ~~Xanthophilomyces~~Xanthophilomyces, the genus Xanthobacter, the genus Paecilomyces, the genus Acremonium, the genus Hyhomonus, or the genus Rhizobium.

32. (Canceled)

33. (Original) A process for producing the oxidized coenzyme Q₁₀ represented by the following formula (II):



which comprises culturing reduced coenzyme Q₁₀-producing microorganisms in a culture medium containing a carbon source, a nitrogen source, a phosphorus source and a micronutrient to obtain microbial cells containing reduced coenzyme Q₁₀ at a ratio of not less than 70 mole % among the entire coenzymes Q₁₀,
optionally disrupting the microbial cells; and

either oxidizing thus-produced reduced coenzyme Q₁₀ to oxidized coenzyme Q₁₀ and then extracting the resultant by an organic solvent, or extracting thus-produced reduced coenzyme Q₁₀ by an organic solvent, purifying optionally and oxidizing the resultant to oxidized coenzyme Q₁₀.

34. (Canceled)

35. (Currently Amended) The process according to ~~Claim 33 or~~
34Claim 33,
wherein the culture is carried out at 15 to 45°C and at a pH of 4 to 9.

36. (Currently Amended) The process according to ~~any one of Claims 33~~
to 35Claim 33,
wherein the concentration of the carbon source in the culture is controlled to a concentration that no adverse effects are substantially caused on the productivity of reduced coenzyme Q₁₀.

37. (Canceled)

38. (Canceled)

39. (Canceled)

40. (Canceled)

41. (Canceled)

42. (Canceled)

43. (Canceled)

44. (Currently Amended) The process according to ~~any one of Claims 33 to 43~~ Claim 33,

wherein the extraction of coenzymes Q_{10} is carried out from wet cells or dry cells of the microbial cells or disrupted product thereof by using a hydrophilic organic solvent.

45. (Canceled)

46. (Currently Amended) The process according to ~~any one of Claims 33 to 43~~ Claim 33,

wherein the extraction of the coenzymes Q_{10} is carried out from an aqueous suspension of the microbial cells or disrupted product thereof by using a hydrophobic organic solvent.

47. (Canceled)

48. (Canceled)

49. (Canceled)

50. (Canceled)

51. (Canceled)

52. (Canceled)

53. (Canceled)

54. (Currently Amended) The process according to ~~any one of Claims 33 to 53~~ Claim 33,

wherein the reduced coenzyme Q_{10} is contained at a ratio of not less than 70 mole % among the entire coenzymes Q_{10}

in the case that the reduced coenzyme Q₁₀-producing microorganisms are cultured with shaking (amplitude: 2 cm, 310 reciprocation/min) at 25°C for 72 hours in 10 mL of a culture medium [(glucose: 20 g, peptone: 5 g, yeast extract: 3g, malt extract: 3 g)/L, pH: 6.0] using a test tube (inner diameter: 21 mm, entire length: 200 mm),

the obtained broth is optionally concentrated,

the obtained solution is vigorously shaken for 3 minutes using 10 parts by volume of glass beads (425 to 600 µm) to disrupt the microorganisms under a nitrogen atmosphere in the concomitant presence of 3 parts by volume of isopropanol and 18.5 parts by volume of n-hexane relative to 10 parts by volume of the broth, and

the prepared hydrophobic organic solvent phase (n-hexane phase) is analyzed by HPLC.

55. (Canceled)

56. (Currently Amended) The process according to ~~any one of Claims 33 to 55~~ Claim 33,

wherein the microorganisms are microorganisms of the genus Agrobacterium, the genus Aspergillus, the genus Acetobacter, the genus Aminobacter, the genus Agromonas, the genus Acidiphilium, the genus Bulleromyces, the genus Bullera, the genus Brevundimonas, the genus Cryptococcus, the genus Chionosphaera, the genus Candida, the genus Cerinosterus, the genus Exisophiala, the genus Exobasidium, the genus Fellomyces, the genus Filobasidiella, the genus Filobasidium, the genus Geotrichum, the genus Graphiola, the genus Gluconobacter, the genus Kockovaella, the genus Kurtzmanomyces, the genus Lalaria, the genus Leucosporidium, the genus Legionella, the genus Methylobacterium, the genus Mycoplana, the genus Oosporidium, the genus Pseudomonas, the genus Pseudozyma, the genus Paracoccus, the genus ~~Petromyces~~ Petromyces, the genus Rhodotorula, the genus Rhodospiridium, the genus Rhizomonas, the genus Rhodobium, the genus Rhodoplanes, the genus Rhodopseudomonas, the genus Rhodobacter, the genus Sporobolomyces, the genus Sporidiobolus, the genus Saitoella, the genus Schizosaccharomyces, the genus Sphingomonas, the genus Sporotrichum, the genus Sympodiomyces, the genus Sterigmatosporidium, the genus Tapharina, the genus Tremella, the genus Trichosporon, the genus Tilletiaria, the genus Tilletia, the genus

Tolyposporium, the genus Tilletiopsis, the genus Ustilago, the genus
Udeniomyces ~~Udeniomyces~~, the genus ~~Xanthophilomyces~~ Xanthophilomyces, the genus
Xanthobacter, the genus Paecilomyces, the genus Acremonium, the genus Hyphomonus, or
the genus Rhizobium.

57. (Canceled)